



# EndoToxFree™ DPBS (1X), USP Grade

## Endotoxin Free Buffer for Critical Research Applications

### OVERVIEW

EndoToxFree™ DPBS (1X), is an ultra-pure, USP Grade Dulbecco's phosphate-buffered saline, formulated without calcium and magnesium. Manufactured under stringent conditions, ensuring an endotoxin level of <0.005 EU/mL, this buffer is specifically designed for sensitive cell culture and research applications where endotoxin contamination could compromise results.

### UNDERSTANDING ENDOTOXIN CONTAMINATION

#### What Are Endotoxins?

Endotoxins are lipopolysaccharide (LPS) components found in the outer membrane of Gram-negative bacteria. Even in trace amounts, these toxic compounds can severely disrupt cell culture experiments and research outcomes.

#### Sources of Endotoxin Contamination

- **Raw Materials:** salts and excipients can carry endotoxins if improperly processed
- **Equipment and Surfaces:** inadequate cleaning and sterilization increases risk
- **Environmental Exposure:** cross-contamination during handling or storage

#### Research Impacts of Endotoxin Contamination

Even trace amounts of endotoxins can severely affect your experimental results.

- **Unwanted cytokine release** in immune cell lines (e.g., THP-1, RAW 264.7)
- **Compromised viability and differentiation** of stem cells and primary cells
- **Significant batch-to-batch variability** in assay results
- **False positive/negative results** in inflammation-related assays
- **Artificial immune activation** leading to unreliable data



## KEY BENEFITS OF EndoToxFree DPBS (1X), USP Grade

- **Ultra-low endotoxin levels (<0.005 EU/mL)** eliminate interference that can compromise your critical experiments
- **USP Grade quality** ensures high purity and consistent composition from batch to batch
- **Calcium and magnesium-free formulation** gives precise control over cell behavior
- **Reliable, reproducible results** across manufacturing lots
- **Regulatory compliance support** for smooth transitions from research to GMP manufacturing

## Calcium and Magnesium Free for Enhanced Cell Control

- **Supports cell detachment** – Eliminating calcium and magnesium ions prevents ion-mediated cell adhesion during cell harvesting procedures.
- **Prevents Unwanted Reactions** – Calcium and magnesium can activate certain enzymes or signaling pathways, potentially affecting experimental outcomes.
- **Avoids Precipitation or Contamination** – In some biochemical or immunological experiments, these ions might cause unwanted precipitation or interactions

## RESEARCH APPLICATIONS THAT BENEFIT FROM ENDOTOXIN-FREE REAGENTS

Reproducibility, sensitivity, and accuracy of your research can be directly impacted by endotoxin contamination. EndoToxFree™ DPBS is critical for:

### Immunology Research

- Prevents artificial stimulation of macrophages and dendritic cells
- Maintains native immune cell behavior for accurate cytokine profiling
- Essential for LPS-sensitivity studies and inflammation research

### Stem Cell Research

- Preserves normal proliferation and differentiation pathways
- Prevents unwanted immune activation that can alter cell fate
- Critical for maintaining stemness characteristics

### Drug Discovery & Screening

- Eliminates compound-endotoxin interactions that confound results
- Ensures accurate assessment of drug efficacy and toxicity
- Reduces false positives in high-throughput screening assays

### Cell and Gene Therapy R&D

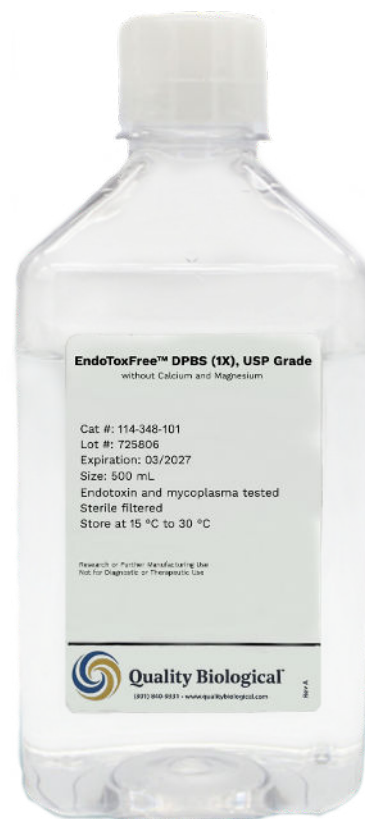
- Maintains native-like cell behavior *in vitro*
- Essential for accurate translation research
- Supports regulatory compliance for therapeutic development

## PERFORMANCE BENEFITS

Feature	Research Impact
<b>Improved Reproducibility</b>	Consistent results across replicates and experimental batches
<b>Enhanced Cell Viability</b>	Reduced unintended immune activation and cellular stress
<b>Increased Assay Sensitivity</b>	Eliminates LPS interference in cytokine and ELISA-based assays
<b>Reliable Comparisons</b>	Critical for peer-reviewed validation and publication
<b>Cost Efficiency</b>	Minimizes repeat experiments due to contamination issues

## PRODUCT SPECIFICATIONS

<b>Product Name</b>	EndoToxFree™ DPBS (1X), USP Grade
<b>Item Number</b>	114-348-101
<b>Volume</b>	500 mL
<b>Endotoxin Level</b>	<0.005 EU/mL (Guaranteed)
<b>Formulation</b>	without Calcium and Magnesium
<b>Water Quality</b>	Cell Culture, WFI Quality
<b>Testing</b>	Endotoxin level, sterility, and mycoplasma



For Research or Further Manufacturing Use. Not for Diagnostic or Therapeutic Use.

## RELATED PRODUCTS

**Water, Endotoxin-Free, Item #118-325-101 (500 mL)**

**Water, Endotoxin-Free, Item #118-325-131 (1000 mL)**

**PBS (1X), pH 7.4, USP Grade #114-340-131 (1000 mL)**

For technical support or additional product information contact **Quality Biological Technical Service**

For a complete listing of Quality Biological products, visit [qualitybiological.com](http://qualitybiological.com)



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